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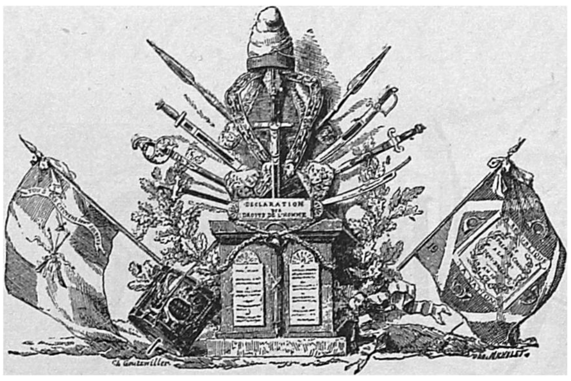


FRENCH ORNAMENTAL IRON WORK.

By Theodore Child.

II.

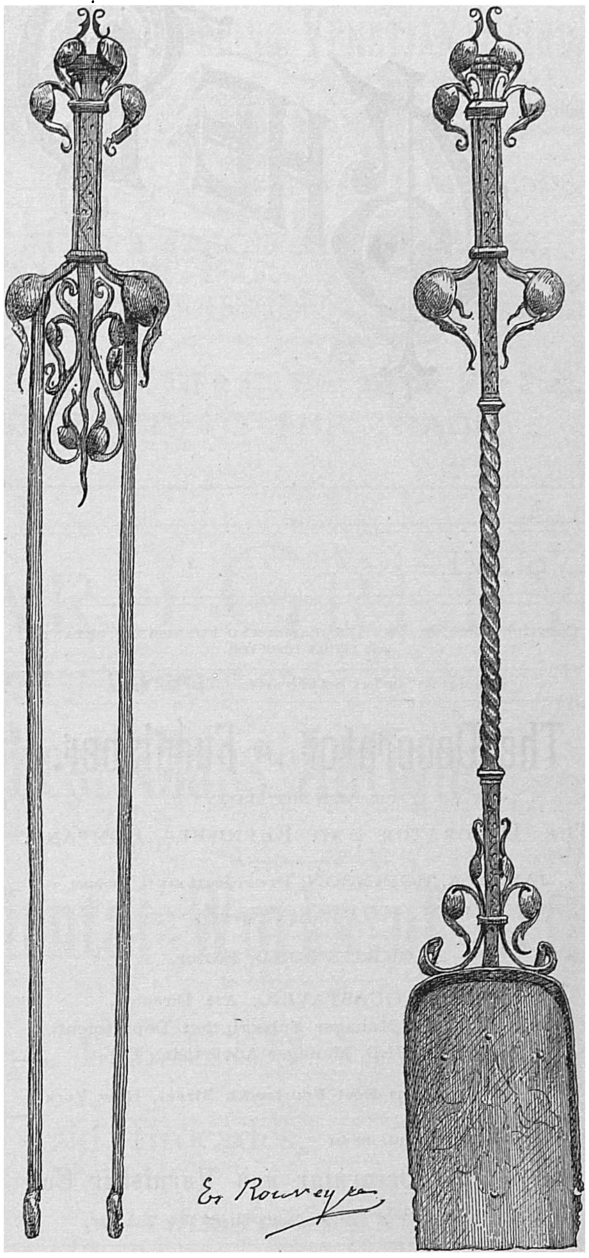
THE making of artistic ironwork is purely a matter of skill and dexterity, depending on the workman rather than on the tools or mechanical appliances. The smiths now-a-days work very much in the same way as they did in the middle ages, and if one of the great artists of the past were resuscitated, whether he who made the hinges of Notre Dame or old Jean Lamour, who made the exquisite palisading of the Place Royale de Nancy, he would find very little in the workshops of our modern smiths with which he was not familiar.

Take for instance M. Favier, who has executed the beautiful designs which are reproduced in our cuts; his workshop in the Rue Langier at Paris is simplicity itself, which fact does not prevent him from producing some of the finest and most artistic ironwork that has ever been made. First of all, we have a bare room with an immense table, where M. Favier (who is, by the way, a pupil of the famous painter Bonnat), makes his own designs, and figures out all the measurements for the working drawings that are reproduced in white by a photographic process on coarse blue paper for the use of the workmen.

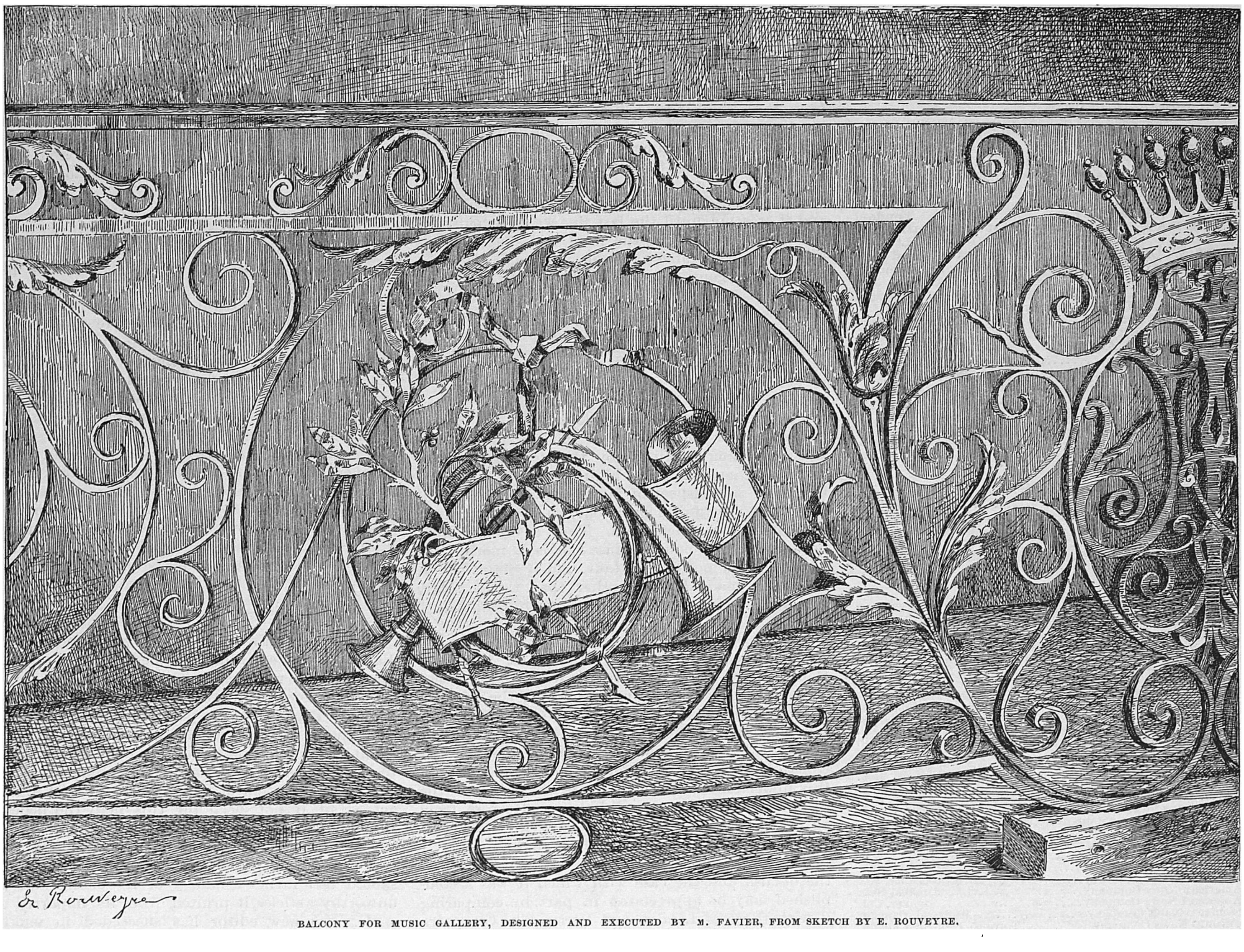
In the workshop proper there are the forges and anvils, and at one end a small steam-engine for driving the blast fan, a few lathes and a strong hand-saw, while in the strongest light all along the shop runs a bench fitted with vises and strewed with hammers, files, chisels. Over this bench hangs here and there a chandelier or a lantern in course of execution, while in the middle of the shop, on tables and tressels, lie fragments of balconies and other large pieces which are gradually being built up, scroll by scroll and leaf by leaf.

Let us examine the anatomy and construction of the balcony for a music gallery, a fragment of which is figured in our illustration. The top rail and molding is simple forging; the second, a thick square rail, is also simple forging; the ornament which serves at once to bind these two rails together, consists of an oval flanked by two scrolls of forged iron attached together and fastened to the rails top and bottom by rivets; fitting closely on to the scrolls and appearing to spring out of them are leaves of sheet iron beaten out cold with the desired form and attached to the forged scrolls by rivets. The main design of the balcony is formed by bold scrolls, springing one out of the other, and welded or riveted together. These scrolls, the varying thickness and graceful taper of which are obtained by clever anvil work, are decorated with sweeping foliage ingeniously contrived so as to mark its heavy joints and to give richness and variety to the filling in of spaces.

In the center of each scroll and attached by a ribbon of iron are attributes of music executed in relief in beaten red copper and traversed crosswise by a laurel branch of forged iron. The coronet and armorial bearings which figure in the center of the balcony are also of red copper which very effectively relieves and enriches the gray iron. This piece will serve us to illustrate all the problems and difficulties of ornamental ironwork. The scrolls are obviously plain forging; they will generally be found to consist of a main branch from which other branches spring, the skill of the designer being shown largely in the way in which he makes one member of the pattern grow naturally and necessarily out of another in beautiful order like the branches and leaves of a real plant. On the other hand he must bear in mind the conditions of the material in which he is working; he must show to the greatest advantage the tenacity of iron, which permits of slender branches carried out to great length and twisted in all sorts of capricious ways, for the nature of the material at once reassures us that these results are obtained without any sacrifice of strength or solidity. Then again the hardness of the metal will dissuade him



FIRE IRONS, DESIGNED AND EXECUTED BY M. FAVIER.

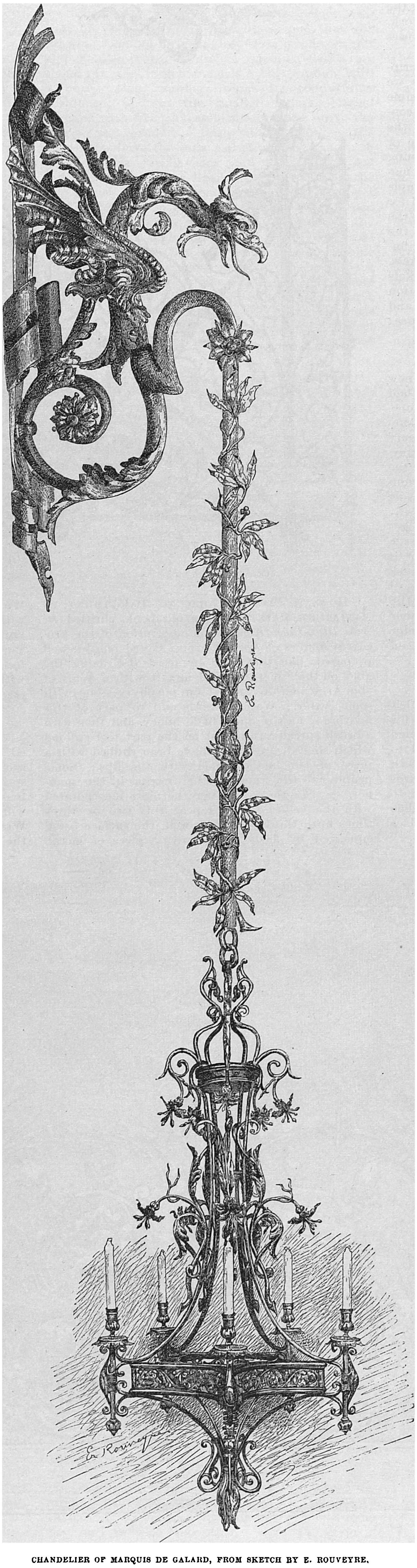


BALCONY FOR MUSIC GALLERY, DESIGNED AND EXECUTED BY M. FAVIER, FROM SKETCH BY E. ROUVEYRE.

from seeking inspiration in the more delicate natural flora, as, for example, the rose, the fuschia, or the chrysanthemum. But in the smith's art, as in all other art work, it is not of much use to lay down general principles. In this as in all decorative and other arts, the requisites are good taste and good workmanship; and for good taste there are no rules. Training and example, not argument, are the only means by which right judgment can be formed. There is, however, one obvious general principle which must be borne in mind by the smith as well as by the potter, by the sculptor in marble as well as by the carver in wood, namely, that whatsoever of art there is in their work must be evolved in a natural and unforced manner from the material that is dealt with, so that the result will be such as could not be got from any other material; if we break this law we shall make a triviality, a toy, a *tour de force*, but not a work of art.

To return now to our balcony: we will suppose that we have forged our scrolls and, as far as possible, that we have welded the branches together at white heat on the anvil—*à la chaude suante* as the French say—with the hammer and without having recourse to brazing the joints by the aid of more fusible metals such as tin and copper—a paltry solution of the difficulty which no true smith would employ. But however great our skill in this heavy bar scrollwork, we shall be unable to weld all the parts together, and so the smith having forged the different members of the design in strict accordance with measurement, lays them on the mounting table, where they are fitted together with screws and rivets, ingeniously hidden by skillful workmen in such a manner that—provided the design be conceived with a view to the conditions of the smith's art—when the whole is mounted you will seek in vain for the joints which might enable you to count of how many fragments it is composed.

The bar scrolls are forged at red heat, the rolling acanthus leaves are beaten out cold and riveted on to the main branches of the design; the attributes of music in the center are likewise beaten out cold. This process is called *relevage au marteau* and, whether the material employed be sheet iron or copper it is one of the most exquisite branches of the smith's art. Supposing that we are going to make one of the acanthus leaves in our balcony design; we have found by experience the form of this leaf flattened out; in fact in the pattern room upstairs we have quantities of leaves, rosettes, and ornaments of all kinds and all sizes cut out flat in sheet iron and numbered according to their measurements. The acanthus leaf is a current ornament, so that we shall simply consult the measurements of our design and choose the necessary flat pattern which we shall trace on a sheet of iron of the required thickness, say somewhere between a sixteenth and an eighth of an inch; then we shall take several sheets, place them together on the table of our hand saw, and cut out as many leaves as we need. Each flat leaf is then taken in hand by a *releveur* or embosser who beats it cold with the hammer on a little anvil and gives it the general outline required. Then he takes it to his vise, in which he fixes tools of various form; he has hammers, too, with different shaped heads, some round, some flat, some concave; near his anvil he has a block of wood and a block of lead. Now the acanthus leaf, which we cut out of a flat sheet of iron, has been beaten on a small anvil in such a manner that its indentations have been curled up on either side and instead of being a flat sheet of metal the embryo leaf is now convex. The next operation is to construct the anatomy of the leaf, which is done by beating up the ribs along the whole and along each part, and to give form and movement by developing the lines and accentuating the modeling and roundness of the different parts. This is very delicate work and requires experience, sureness of eye, and a delicacy of wrist-play as fine as that of the fencer, for in the art of embossing or *relevage*, which is simply a question of the displacement of molecules, what is needed is skill rather than strength. If you hammer the cold iron too hardly it cracks and your leaf is spoilt.



CHANDELIER OF MARQUIS DE GALARD, FROM SKETCH BY E. ROUVEYRE.

The problem is to coax the iron, to lead it with the hammer, to displace the molecules in such a way as to strengthen the weak parts and to thin down the parts that are too thick. Suppose, for example, that you wish to produce a hollowness or a relief, you must not beat the very spot where the desired effect is to be produced, but the parts around it, so as to drive the molecules along and furnish the material at the same time that you produce the form. For ordinary purposes it suffices to work up your embossed work in the manner indicated with the hammer on chasing or raising stakes held in the vise, but for very delicate work there is a further process of finishing. The ornament is first beaten out as we have described, only round the edges a margin of metal is left. The piece is then filled with molten lead or mastic and firmly nailed on a wood block with T headed nails, and the whole surface of the ornament is finished with chisels, called *mattoirs*, adapted to producing all kinds of hollows and reliefs and resembling very much the chisels used by workers in bronze. When the object is sufficiently chased and finished up, the superfluous margin of metal is cut off, the lead is melted out, and the piece is complete. Such is a brief indication of the art of embossing as applied to sheet iron or to copper and brass. Iron, however, being less ductile than these two latter metals, has to be worked with greater care, and if the design is complicated it has even to be annealed from time to time, because the cold hammering makes it brittle. The modern coal-melted sheet iron, too, is not so good as the sheet iron which used to be made by the old system of wood smelting, nor is the machine-rolled bar iron so tough and ductile as the metal produced by the more thorough and laborious processes of the past, and through defects in the metal the smith often loses the work of days. It is a charming art but it is full of mortifications.

Still continuing our examination of M. Favier's balcony for a music gallery, we now come to the branch of laurel which traverses the central ornament. This is forged hot from beginning to end. The tapering branches, the leaf stalks and each leaf, are forged on the anvil with the hammer, and each fragment is welded on to the main stem at white heat.

In several other pieces executed by M. Favier and represented in our engravings, the reader will remark similar work which cannot fail to excite our astonishment when we think that the welding of each fragment implies the return of the branch to the furnace and hammering on the anvil with sufficient force to mingle the molecules of the two pieces.

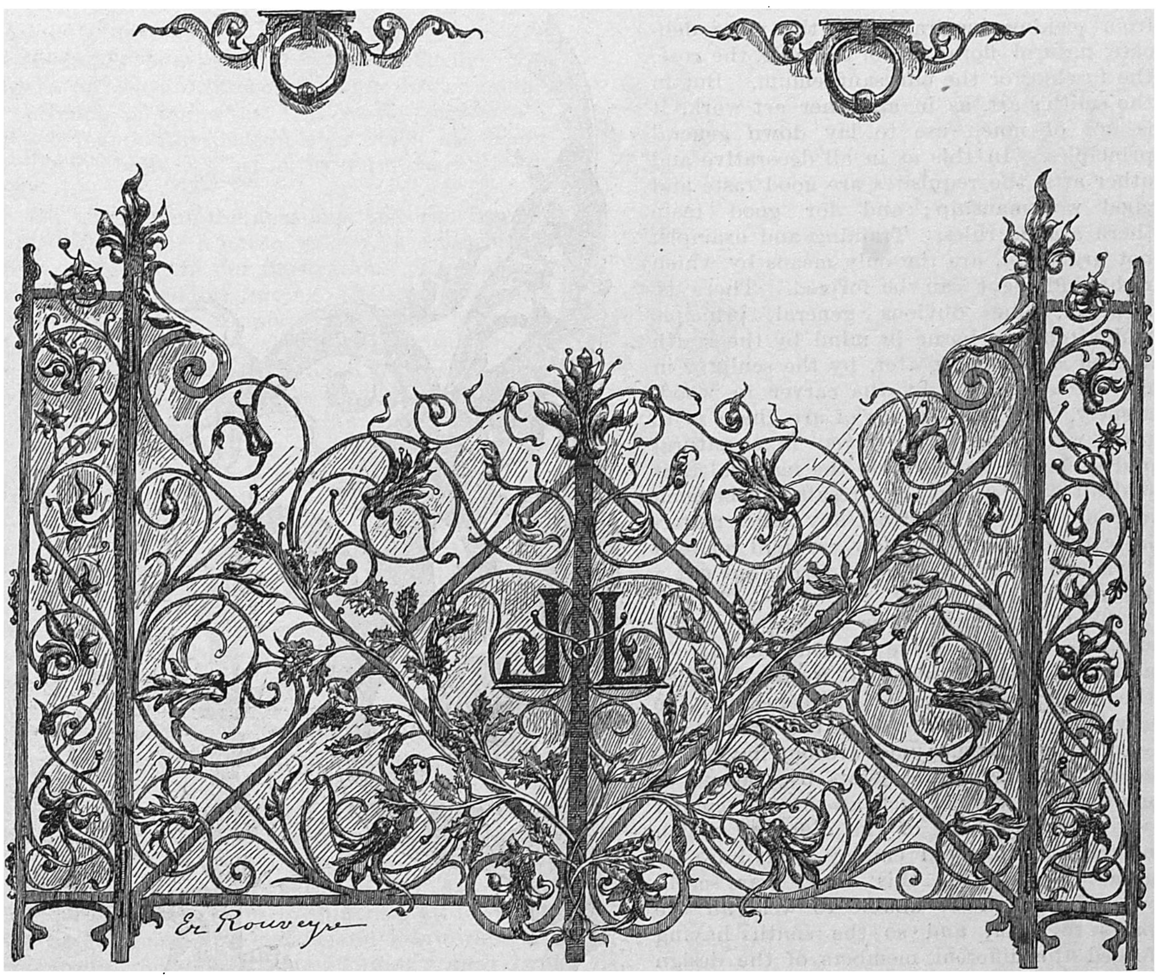
In our other illustrations we shall see some more difficult forging than that of this music balcony which I choose for lengthy description rather on account of its simplicity. Such is the splendid grating and balustrade executed for the new mansion of the millionaire, M. Iturbe, in the Avenue du Bois de Boulogne. Parisian houses, the reader will remember, are entered generally by an immense *porte-cochère*. In fine mansions these doors and gates attain veritably monumental proportions, for often they are twenty and twenty-five feet high. Sometimes they are of wood, but in modern houses they are often of iron or half wood and half iron, and in this case the iron part is glazed with huge plates of glass. In the Champs Elysée, and in the vicinity of the Parc Monceau, there are *porte-cochères*, the ornamental iron work of which has cost from five to ten thousand dollars. The grating in our illustration forms a panel in a *porte-cochère*, the scrolls are of forged iron and the leaves and ornaments of red copper. The reader will remark the massiveness of the scrolls and the innumerable difficulties in forging suggested by the tapering and swelling branches with their flanges and ledges and interlacements, and massive grace. The combination of the red copper ornaments and of the gray iron is admirable.

Another fine piece of work by M. Favier is the chandelier suspended by a rod engarlanded with laurel leaves from a *potence* of *repoussé* sheet iron, fashioned into the form of a fantastic animal, half cock, half dragon. This chandelier hangs in the dining-room of the Marquis de Galard, at Paris. There is also a good deal of M. Favier's work in America. The shop front of Herter & Co. in New York, a fire guard in the house of Mr. Edward D. Adams of New York, and fire guards and other objects in the houses of various amateurs.

Naturally, artistic ironwork of this description costs dear, for it is all hand-made. As we have seen, machinery plays the smallest possible rôle in the modern smith's workshop, being confined simply to the hand-saw for cutting out the ornaments in the flat sheets to a small lathe or two which may be used occasionally in turning and finishing small details, and to planing machines which may be used for fashioning simple moldings. Very rarely, too, a die may be used for stamping some ornaments. But in reality the smith's tools are the hammer and anvil and the file. The chisel and graver are also used for finishing very delicate work, such as jewel caskets, small mirror frames, bracelets, jewelry and trinkets of iron. But objects of this latter description come rather under the category of goldsmith's and silversmith's work, which is out of our province; the only difference is in the metal employed.

IT was known some time since that a new method of decoration for half-baked porcelain had been discovered at the great Sèvres manufactory, but that something was wanting to its completeness. At the last Paris Exhibition of the Society of Arts and Manufactures, some pieces were exhibited which had been prepared according to the new method, and which attracted much attention. M. Lauth, the director at Sèvres, has since succeeded in completing the process. He and the Chambers of Commerce in Paris and Limoges would have desired to keep the whole process a trade secret, so as to secure the advantages of it altogether for French industry; but the impossibility of doing this has been recognized. Now it is only hoped that the first appearance in the open market of wares prepared in the new manner shall be secured for France. The exact character of the new process has, naturally, not yet been ascertained by outsiders.

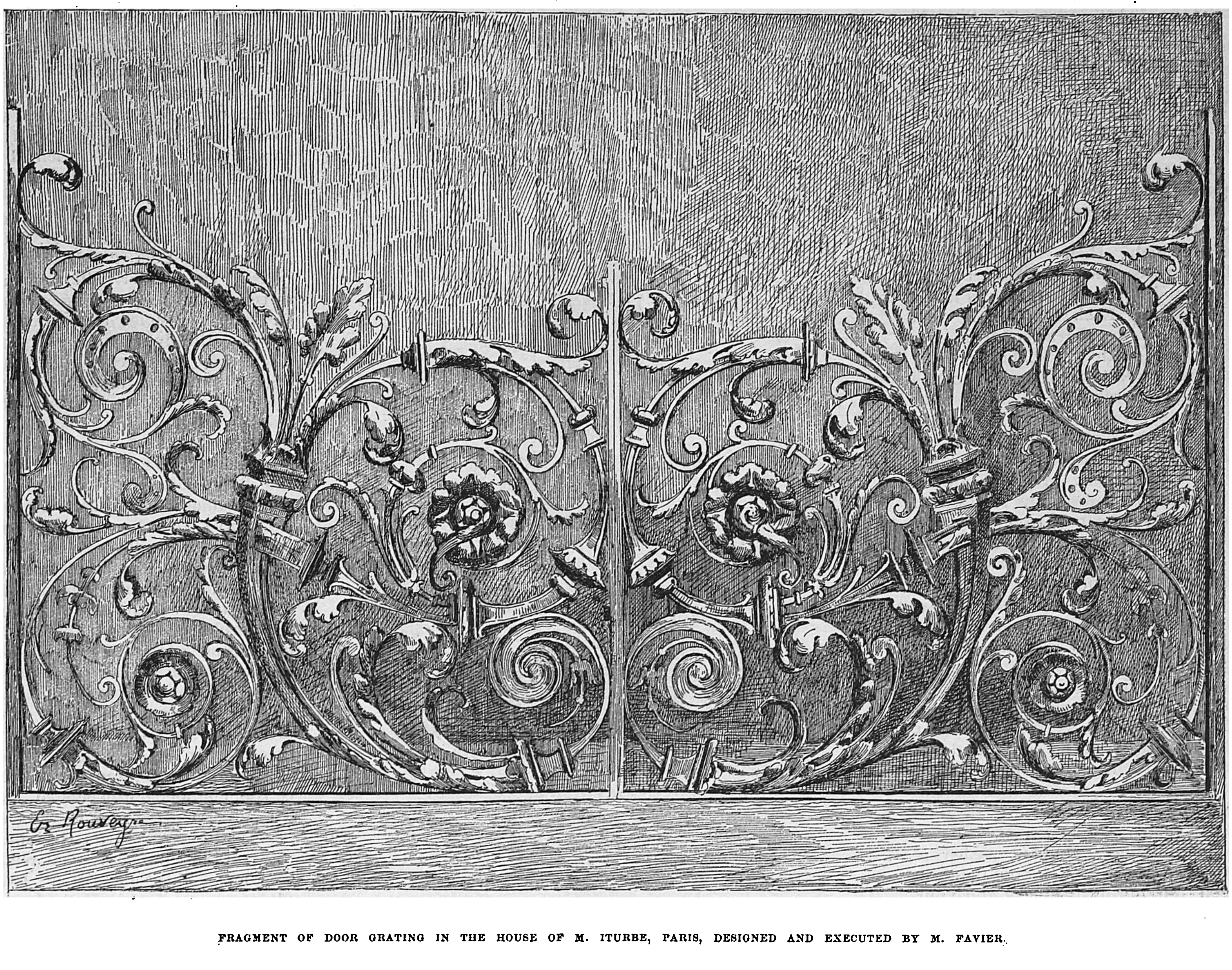
WHERE a ground shows a rib or grain and it is desired to multiply the gradations of shade, this may be in some instances advantageously effected by adding a slight amount of bronzing liquid to gold and drawing a flat brush thus charged with an extremely light touch backwards and forwards over the surface. The gold will attach itself to countless minute points; a thin coat of shellac varnish will keep the gold more firmly in place and somewhat subdue the brilliancy.



FIRE GUARD AND RINGS IN THE HOUSE OF M. LEBEY, DESIGNED AND EXECUTED BY M. FAVIER.

HOW TO APPLY GOLD TO PARCHMENT IN MINIATURE PAINTING.—AN old book, entitled *De Arte Illuminandi*, gives the description of the process as follows: "We take some baked plaster, well prepared, like that used by artists for fixing the gold on their pictures, and mix it with a quart of 'bol Armenien' powdered on porphyry stone with some water. We afterwards add to part of this mixture some size and a little honey, and then with a brush spread a thin coat on the part to be gilded which should previously have been rubbed with a piece of isinglass softened with the lips. Some people rub the whole of the drawing in this manner, so that the colors may be more incorporated with the vellum. We repeat this two or three times until the layer holds well, the surface being equalized by flattening it with a piece of metal. We then polish it with a hare's foot and paint it with frothed white of egg, and, lastly, cut with a knife round the gold required and press it on to the parchment so that it adheres. It will be perfectly dry in a moment, when it must be burnished with the tooth of a wolf or agate as used by gilders, the same process being employed for silver."

RIBBONS, real or simulated, are much resorted to by designers in molding and carving, as accessories of various ornamental objects. Not to speak of contrasting colors thus introduced, the free and easy grace of a ribbon skillfully disposed will often serve to soften down severe outlines. Wrapped round a vase they indicate more clearly the curves.



FRAGMENT OF DOOR GRATING IN THE HOUSE OF M. ITURBE, PARIS, DESIGNED AND EXECUTED BY M. FAVIER.